THE COSTS OF AIRCAFT SQUADRON READINESS

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INTRODUCTION

How much does it cost to achieve readiness? Does it cost the U. S. Navy more to train a light-jet attack squadron of A4D aircraft at Oceana, Virginia, than it does at Miramar, California? Assuming that the S2F squadrons in Task Group ALFA achieve the identical readiness grade of those in Task Group BRAVO, which squadron does the job the most economically? To the uninitiated - Joe Civilian, most businessmen, some Congressmen - these are simple, logical questions which can doubtlessly be answered by a quick reference to "the record." To the average Naval officer, these questions mean: "The man wants to know the BRAVO Allotment cost per flight hour." To some Naval officers, the answers to these questions are summed up in a single statement: "You just don't understand the problem!" And, finally, to a few other officers these questions evoke a question in return: "Have you noticed how far your nose is intruding into my business?"

It is the intent of this paper to examine the factors which contribute to the cost of aircraft squadron readiness with a view toward determining the feasibility of assigning these costs to an individual squadron. In order to do this, it is first necessary to become conversant with the term "readiness" as it is currently understood by operational and administrative commanders. To assist this effort, the reader is taken through some of the pertinent steps in

the chain of command as depicted in Figure 1.[1] Throughout the study existing cost records relevant to squadron operations - such as the familiar dollars of BRAVO Allotment per flight hour mentioned above - are described. Additional data that would be required in order to tell a more complete story is indicated. Finally, some of the possible uses of additional cost information are outlined along with some implications of the uses as the journey is made back up the chain of command of Figure 1.

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[1]Note that Figure 1 is entitled SIMPLIFIED Chain of Command. It by no means purports to be either a complete picture or even an accurate one for purposes other than those for which it is shown. For example, operational command is exercised by the Chief of Naval Operations only as he acts as a member of the Joint Chiefs of Staff through certain Unified Commanders.

SIMPLIFIED CHAIN OF COMMAND

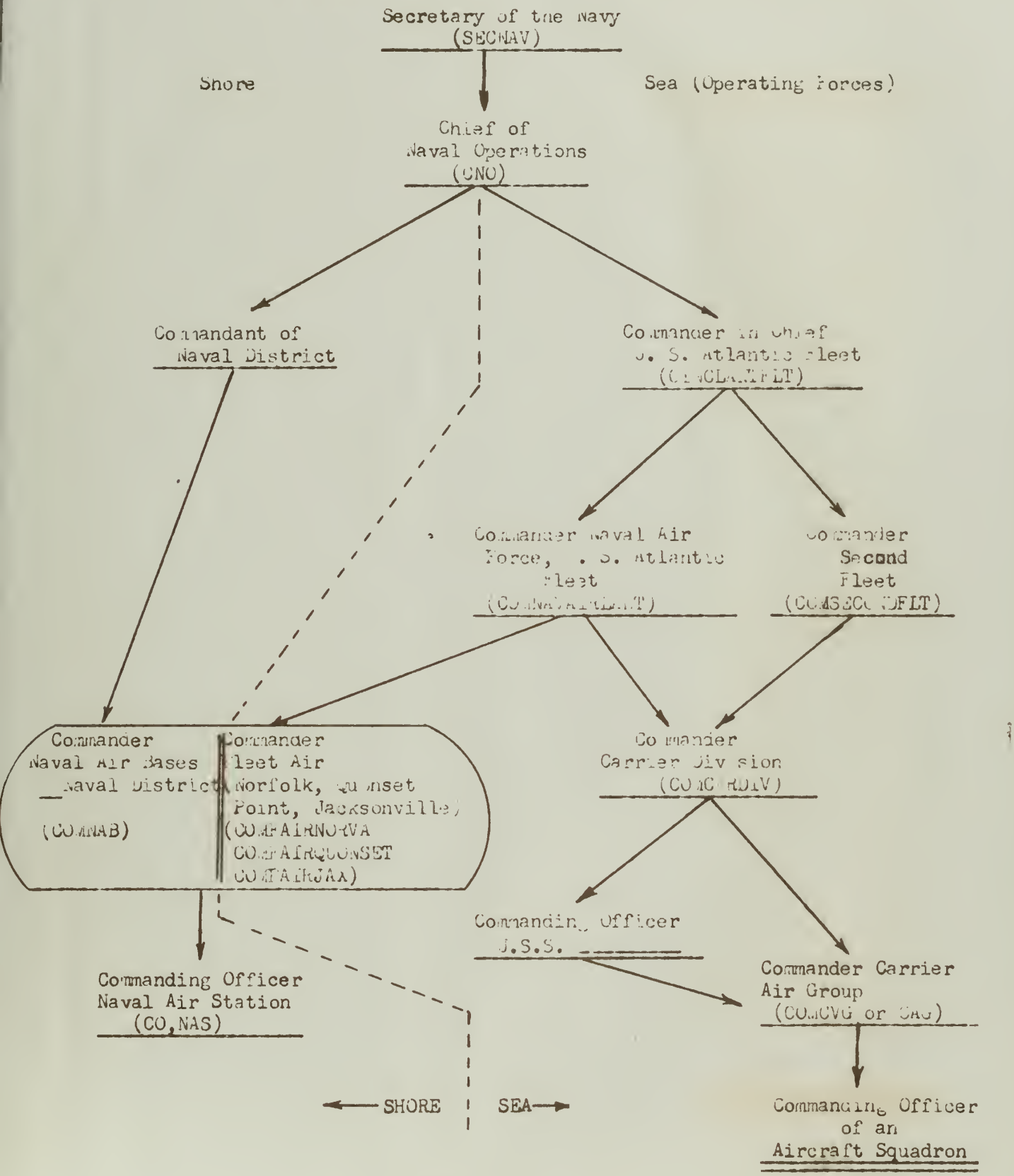

Figure 1.

CHAPTER I

READINESS

Readiness is by no means all things to all people. On the other hand, it can be a very elusive thing because it means something different to almost every person who concerns himself with it.

There are those who will make a strong case for what one may choose to call "the big picture" variety of readiness. Proponents claim, and sometimes loudly at that, that every dollar spent and every action taken by each person in the military establishment should have as its goal an improvement in the status of readiness of that establishment. It is not too difficult to convince oneself that all money spent and action taken does in fact have an effect on readiness, albeit not and improvement. Few persons indeed would question direct inputs to readiness such as gunnery practice, anti-submarine exercises conducted by surface and air units, or even defensive practices such as fire drills and ditching practice. A contract administrator riding herd on a defense contract somewhere in the far-flung complex of the Bureau of Naval Weapons can doubtless relate his actions to ultimate effects on the readiness of the Navy to do battle, even though his views might not be shared by members of the gun crew on a Seventh Fleet destroyer standing off the troubled shores of Southeast Asis. The officer studying financial management or accounting may at times need to back off and take a deep look into an uncertain future to trace the thread

that links him to an ultimate ability to wage successful war against any possible enemy, but trace it he can - so say the men who look at "the big picture." There is one category of person in the Navy who is almost invariably unimpressed by any argument advanced to convince him that he himself is contributing to readiness, and that is the hot-blooded, Gung-ho young semi-adult who joined the Navy so that he could go forth and set the rest of the world on fire but somehow wound up as a mess cook at the Navy base in his own home town.

Narrower points of view concerning readiness frequently are centered on the Fleet. Generations of Navy men were imbued with the undisputed adage about the nation's first line of defense. A natural by-product is that he who is a member of "the Fleet" is contributing to readiness, while he who is not obviously contributes only to the weight of the millstone around the fighting man's neck. And within the Fleet itself there is by no means unanimity of opinion. Destroyer-men and aircraft carrier sailors of tody, just as battleship sailors of yesterday, scarcely look upon men in ships of the train as worthy of the name sailor, while submariners own no equal on, under, or over the sea. Within a ship itself the controversy continues. Members of the gun crews are under no illusions about the "black gang" - unfort-unately engineers are needed in order to get this floating gun plat-form from one engagement to the next. Similarly, the men who fly the aircraft which are the main battery of an aircraft carrier are wont to look upon the other three thousand-odd souls on board as little better than second class humans. Pride? Esprit-de-corps? Yes, all of that and more. Behind it all lies the controversy over readiness - who

contributes the most?

The foregoing discussion has centered on relative contributions to readiness - the ability to do a job. The complete recipe for readiness, regardless of the cook, includes another important ingredient: timeliness. Complete ability - if such a thing exists - to fight a war next year may well be worthless in the face of an overwhelming attack next week. A sense of urgency is easily achieved when faced with immediate danger or the prospects of it. Ability to do the job <u>now</u> was perhaps never more tellingly underscored than by Captain Taussig upon reporting with his destroyer squadron to Admiral Bayly, the commanding chief of the British forces, at Queenstown within weeks of our entry into World War I:

> After acknowledging the introduction, Bayly's first words were these: "Captain Taussig, at what time will your vessels be ready for sea?" Taussig replied, "I shall be ready when fueled." The admiral then asked, "Do you require any repairs?" (Meaning dockyard work.) Taussig answered, "No, sir." The admiral's third and last question was, "Do you require any stores?" (Meaning dry provisions.) Taussig answered, "No, sir! Each vessel now has on board sufficient stores to last for seventy days." The admiral concluded the interview with these instructions: "You will take four days' rest. Good morning."[1]

In more recent times the Cold War has a way of growing old, a tendency to blunt the sharp edge of readiness by striking it against the crumbling rock of repeated Soviet threats. Admiral Jerauld Wright, formerly Supreme Allied Commander, Atlantic, and Commander-in-Chief, U.S. Atlantic Fleet, never permitted himself or his staff to drop the guard of readiness for a moment. His oft-repeated assessment of his

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[1]As quoted by Carroll Storrs Alden and Ralph Earle, <u>Makers of</u> Naval Tradition, Boston: Ginn and Company, 1925, p 295

own task and that of his commands was to "be ready to fight a war tomorrow morning before breakfast." One of the most colorful of present-day naval commanders, Admiral "Cat" Brown, brought home the immediacy of the readiness requirements of the Sixth Fleet which he then commanded by declaring that his problem was to keep the Fleet alive and fighting for at least forty-eight to seventy-two hours after the commencement of open hostilities.

In a formal organization filled to the brim with formal people trained from the start to think in formal terms, surely one might expect to turn to the proper place and read the formal definition of the term READINESS. Certainly it must have been reduced to specifics and long since routinized. This all-important objective of any armed force must be reducible to a formula, and without even the need for a trite modification of "magic" formula. Having once penetrated the maze of arguments surrounding the relative contributions of the various groups, we need only turn to the written word in the manuals to determine the exact meaning of readiness.

Readiness Defined by the Chief of Naval Operations

The words above need not be looked upon as a haunting mockery. The Chief of Naval Operations has indeed subscribed to definitions of readiness as well as yardsticks by which it shall be measured. For example, there is the definition from a document as basic as the Dictionary of Military Terms for Joint Usage: Readiness is the state of preparedness of an individual, force, or organization for carrying

out an operation, mission, task or the like.[2] This definition, from the vantage point of the Office of the Chief of Naval Operations, reads with practically no necessary modification: Readiness is a measure of the ability of the United States Navy to carry out its assigned missions.

Turn now to the "Aircraft Accounting System," an eighty-eight page pamphlet published as OPNAV INSTRUCTION P5442.2A by the Office of the Chief of Naval Operations.

> 1. The purpose of this Instruction is to establish within the Naval organization an aircraft accounting and statistical system of such scope and timeliness as to provide the CNO, the Chief of the Bureau of Naval Weapons, and other commands with sufficient information to: (1) plan, direct, control, and describe the aircraft program; (2) maintain official inventory data for the accountability of every aircraft in Navy custody; and (3) provide a consolidated statistical service to all activities concerned with Navy aircraft.
>
> 2. Basically, the system is designed to provide three kinds of data:
>
> > Who has what aircraft, and in what condition and position in service life is the aircraft?.....This is inventory data.
> >
> > What was done, by whom, to aircraft?.This is Logistics data.
> >
> > What was done, by whom, with aircraft, and how ready were the aircraft?.....This is Operations and Readiness Data.
>
> 3. The aircraft inventory, logistics, operations, and readiness data are collected for management. To manage means: (a) decide what is to be accomplished, (b) direct the selection, acquisition, and sustenance of the means (including funds from Congress) for doing it, (c) command the use of the means, and (d) review the whole business to see how it could be done better, why things failed to go as planned, and what was overlooked, and what was

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[2] Dictionary of Military Terms for Joint Usage, Joint Chiefs of Staff Publication No. 1

> extraneous; and to learn and benefit from experience. The capability to fight (as a deterrent to war), or the actual use (in the conduct of war) of, armed aircraft on a combat mission is the prime reason for naval aviation. Hence, aircraft is the prime element of naval aviation; all others (aviation base facilities, aviation supply, etc.) are subsidiary thereto. Since the Aircraft Accounting System is the prime informational base for management of the aircraft element of naval aviation, accurate and complete aircraft data is of critical importance.[3]

The Glossary of the same instruction contains a further definition pertinent to the discussion of readiness in an aircraft squadron:

> READY (Aircraft). A Flyable aircraft having the necessary equipment aboard to carry out the primary mission for which it was assigned. An aircraft without necessary equipment installed will be considered Ready if the equipment is on hand, serviceable, and readily installable within one hour. When applied to combat aircraft in combat units, Ready aircraft are able to perform the scheduled combat mission; when applied to other aircraft, Ready aircraft are capable of performing the scheduled mission or training.[4]

Here we see again the two basic ingredients of Readiness: ability, or capability, and timeliness. It may be well to take note here of the previous title of this Instruction. Prior to the publication date of the current edition, May 1, 1960, this Instruction was titled "Aircraft Operational Readiness and Activity Report". In the working papers leading to the current revision of the instruction, the purpose of the previous edition was discussed. In brief, its purpose was to provide information on Navy Aircraft covering operational readiness, reasons (with quantitative measures attached thereto) for non-readiness, in-commission availability, and flight activity. Insofar as naval aircraft are concerned, the interests of the Chief of Naval Operations

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[3]Department of the Navy, Office of the Chief of Naval Operations, OPNAV INSTRUCTION P5442.2A OP-501 Ser 1102P50 of 1 May 1960, p 1

[4]IBID., p 78

were said to be centered in the operational readiness aspect and the major areas of non-readiness which were itemized as maintenance, logistics and ground support equipment.

Readiness at the Fleet Commander Level

Even the somewhat divergent aspects of readiness that we have explored through the eyes of the Office of the Chief of Naval Operations would not be too difficult to assimilate if this were the only facet of the picture. Further investigations at other levels of command, however, quickly disclose that readiness does indeed have other faces.

The next level below the Chief of Naval Operations - and the level at which operational command is exercised under the existing concepts implemented in the 1958 reorganization of the Department of Defense - is the Unified Command. At this level, for example, is Commander-in-Chief, Pacific, and Commander-in-Chief, Atlantic. The Navy components of these commands are Commander-in Chief, United States Pacific Fleet (CINCPACFLT), and Commander-in-Chief, United States Atlantic Fleet (CINCLANTFLT) respectively. And readiness begins to change right here.

Strategists on the staff of CINCPACFLT study three basic items in fashioning the plans for defending the United States in their area of the world: (1) the threat, (2) the geography, and (3) the forces available - both men and weapons - to meet the threat. Strategists on the staff of CINCLANTFLT study the same problems related to their areas of interest, and - small wonder - arrive at different conclusions from

those of their counterparts around the world.[5] Thus it is that total readiness in the Pacific is enhanced by the employment of the P5M Martin Marlin seaplane, while the planners in the Atlantic have seen fit to place more emphasis on the capabilities of the P2V Lockheed Neptune land-based patrol aircraft.

The Fleet Commander is still looking at readiness at arm's length, however, albeit his arm is not as long as that of the Chief of Naval Operations. It would be a grave injustice to say that Admiral Dennison, the current Atlantic Fleet Commander, does not concern himself with the details of readiness. It would also be an open admission of ignorance to consider readiness at this command level in the same terms as those which would be of consequence to a small unit commander. For example, a squadron commander might well concern himself with the fact that the radar equipment in one of the aircraft of his command is inoperative; the Fleet Commander could well ignore this and center his attention upon an indication that this type of radar equipment characteristically is unreliable and unable to meet the demands put upon it by usual operating conditions met throughout the Fleet. In this instance, each of the officers is concerning himself with readiness commensurate with the scope of his own responsibilities.

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[5]This is not to say that their deliberations are limited to these three general areas. A more detailed investigation, however, is not relevant to this paper, and would also rapidly encounter problems of security classification.

Readiness at the Numbered Fleet and Type Commander Level

The next step down the chain of command brings the investigation to a split path. The numbered Fleet commander (Commander Second Fleet, Commander Sixth Fleet), and the equivalent command level Commander AntiSubmarine Defense Forces, U. S. Atlantic Fleet, follows the path of operational command. The type Commander, on the other hand, follows the path of administrative support. Commander Naval Air Force, U. S. Atlantic Fleet, exemplifies this administrative commander who is also referred to as the logistics type commander.

The Commander of the Second Fleet is the operational commander of the offensive forces assigned to the Commander-in-Chief, U. S. Atlantic Fleet. It follows, then, that his prime concern in the readiness area centers upon the level of training attained by the forces assigned. This is not to say that he excludes from his considerations the material strength of the forces assigned, and certainly he may not omit consideration of weaknesses of these forces. However, his job reduces itself to making the most of what was assigned to him. He may well state a requirement for more and better trained personnel to operate more modern equipment, but he himself is not the commander responsible for fulfilling these requirements. For example, he may well note that A4D aircraft assigned to his forces are inadequate to perform the mission of strike support, and he may consequently state a requirement for a newer, faster, and better equipped aircraft to replace the A4D. The tasks of procuring replacement aircraft and of training the personnel in the new skills

involved, however, will not fall upon his shoulders. COMASDEFORLANT fulfills a similar role with the defensive forces of the Atlantic Fleet. He attempts to maximize the effectiveness of the anti-submarine forces which are available to him, and at the same time will state requirements for new equipments and skills needed to combat the potential submarine threat.

Commander Naval Air Forces, U. S. Atlantic Fleet (COMNAVAIRLANT), as administrative or logistics Type Commander, performs complementary functions to those enumerated above. In recent years this commander has looked upon readiness as consisting of three major subdivisions: Material, Personnel, and Training.

(1) Material. New aircraft are accepted from the manufacturer by representatives of the Bureau of Naval Weapons and are transferred to the ultimate Fleet user at the direction of COMNAVAIRLANT, who at this point assumes responsibility for logistic support of the new aircraft. He coordinates the range and scope of spare support through the aviation supply system, provides technical instructions for the maintenance and upkeep of the aircraft, monitors the distribution and the installation of changes to the aircraft as they become available - in short, it is his responsibility to see that the end user has in his hands a ready aircraft.

(2) Personnel. COMNAVAIRLANT monitors the receipt and distribution of personnel from two primary sources: (a) new input from various basic training sources such as the Naval Air Training Command for new pilots and the "Boot Camps" for new enlisted personnel, and (b) personnel returning to the Fleet from tours of shore duty.

Distribution control has varied from time to time, but at the present time COMNAVAIRLANT monitors the actions of the Bureau of Naval Personnel with an eye to insuring the equitable distribution of the various talents as well as numbers of personnel to the operating units. Under the current concept of Level Readiness, which will be further developed in the ensuing paragraph, COMNAVAIRLANT is also very much concerned with the number and rate of transfers out of operating units. Excessive personnel turnover obviously could be expected to have a detrimental effect on the continuity of effort in a given unit.

Level Readiness strives to maintain a small but steady personnel turnover rate roughly equivalent to double the number of persons assigned divided by the normal length of tour expressed in months. Thus if three hundred men are assigned for a normal tour of thirty months each, total transfers in any given month (INS plus OUTS) should approximate two times three hundred divided by thirty, or twenty transfers. Notice that the measure here is one of quantity only rather than quality; however, over an extended period of time quality changes tend to even out just as quantity. Of particular significance here, also, is the fact that READINESS begins to relate to specific unit commands. For the first time in tracing readiness downward through the chain of command, it can be seen that a commander at this level is involved not only with the problem in its overall aspects but also with the particular problems of concern to the individual unit. But note, too, that in progressing down the chain of command the perspective has narrowed so that initial procurement of personnel has all but vanished from the picture, and the

Type Commander "procures" persons who have already completed the basic training stages.

(3) Training. In order to understand the responsibilities of the Type Commander in the extremely important function of training, it is necessary to have a firm grasp of the concept of level readiness which was introduced in the preceding paragraph.

Prior to 1957, cyclical readiness was practiced in aircraft squadrons. This concept provided that a "bunch" of basically trained personnel were brought together in one command which may or may not have held over a small nucleus from a previous deployment cycle. Over a fairly well-defined training cycle this "bunch" was gradually molded into a closely knit fighting organization. Having attained a certain degree of readiness, this organization was utilized in further training periods and fleet training exercises until it finally evolved into a first-line fighting unit. At this point (in theory, at least) the squadron would be deployed - it would take its place as an important cog in a much larger force such as the Sixth Fleet in the Mediterranean or the Seventh Fleet in the Far East. At the end of this period of deployment, the squadron would return to its home port and, for all practical purposes, disband. The length of the cycle varied with the type of aircraft and employment of the unit, but a representative length would be thirty to thirty-six months. This concept provided a highly trained and effective first team with back-up units at varying stages of preparedness. As the number of combat units was being reduced in the mid-1950's, it soon became apparent that turn-around time between deployments was shrinking so drastically that it was no longer possible to train a "bunch"

of men to become a fighting unit in the time available.

Into the midst of this rapidly developing chaos was thrust the new concept of level readiness. At the onset the only well defined features of the new idea were its supporters and opponents, each of them certain and vociferous. Suffice it to say of the opponents that they were overwhelmed by the facts of the new situtation, principally the fact of reduced forces. Using as its base the stabilized, evenly paced personnel turnover described in the preceding section, it provided a relatively high percentage of "old-timers" at all times. The newcomer, be he "nugget" or "boot",[6] found qualified instructors who had been in the command long enough to be thoroughly trained not only in their own assignments but also as supervisors of the uninitiated. On the other hand, since there would always be some newcomers in the organization under the rules of the new system, the overall level of training could never in theory attain the peak possible under cyclical readiness, when personnel changes were reduced practically to zero during periods of deployment. By loosening the shackles which bound a unit to a long-term cycle of training, the concept and practice of level readiness permitted Naval Aviation to recoup much of the flexibility which it lost during the drastic reduction in force levels in 1956 and 1957.

COMNAVAIRLANT, as the logistic Type Commander, is charged with the responsibility of providing trained units to the operational

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[6]"Nugget" - a Naval aviator serving his first tour in a squadron following completion of flight training.
"Boot" - a sailor recently received from basic training, or "boot camp."

commanders (COMSECONDFLT and COMASDEFORLANT). Acceptance of the concept of level readiness made the fulfillment of this responsibility possible providing a mutually agreeable definition of the term "trained" could be reached. To assist in this matter, COMNAVAIRLANT devotes a large portion of its Training and Readiness Manual to a detailed exposition of numerous formalized "exercises." Reports of completion of these "exercises" by the individual squadrons, along with items giving effect to the material and personnel conditions extant, is converted into a numerical grade representing percentage of readiness.[7] Close collaboration of opposite numbers on the staffs of the COMSECONDFLT and COMNAVAIRLANT is necessary to assure that all important training evolutions are formalized into exercises and that relative weights assigned the various exercises will produce a truly representative picture of the training which a squadron has undergone.

COMNAVAIRLANT is also responsible for providing individual training for officers and enlisted men in order to qualify them in the operation of various equipments and systems in operating units of the Fleet. An example of this type of individual training is that provided by the Fleet Airborne Electronics Training Unit, Atlantic (FAETULANT), at Norfolk, Virginia, where pilots and enlisted aircrewmen are taught the tactical use of electronic systems incorporated in the aircraft of Fleet squadrons. The introduction of new equipments in Fleet aircraft would obviously fail to contribute to the

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[7]Problems introduced by variations in interpretations of these exercises will be considered in a subsequent section of this chapter.

betterment of readiness unless this introduction can be matched with qualified operators. COMNAVAIRLANT, through FAETULANT, must anticipate the arrival in Fleet units of the new equipment by such lead-time as is necessary to permit installation of the equipment in the school, training of instructors to the point where they are qualified in turn to teach the use of the new equipment, and training of the squadron personnel from those units which will be the recipients of the equipment prior to its arrival.

In summation, the type commander is charged with the responsibility of producing level-ready squadrons for use or employment by the operational commanders. Readiness from the type commander's point of view consists of three major subdivisions: Material (including maintenance and supply), Personnel, and Training (both unit and individual).[8]

Readiness at the Squadron Level

To make the journey down the chain of command complete, it would be necessary to consider several other commands: The Carrier Division commanders, Wing commanders, aircraft carrier commanding officers and Carrier Air Group commanders. The first two, however, have essentially the same viewpoint as the numbered Fleet commander and the type commander, while the latter two are in much the same category as the squadron commanding officer.

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[8]Though this section has been developed through the Atlantic Fleet organization, the same command levels with similar titles are present in the Pacific Fleet. These two analogous command systems provide the ready forces for operational commanders throughout the world.

It might be natural to consider that the squadron commanding officer, located at the nether extremities of a long chain of command, could have no mind of his own regarding readiness or, for that matter, any other facet of command. Nothing could be farther from the truth. The squadron commanding officer's personal interpretations of the myriad instructions, publications, manuals, and directives engrave his personality and character boldly across the face of his command. If the squadron establishes an enviable record, the commanding officer is deserving of credit and higher command can congratulate itself upon its success in appointing the right man for the job. Conversely, a squadron which suffers decreases in its readiness and effectiveness as a fighting unit must inevitably reflect unfavorably upon the abilities of the commanding officer and give pause to those responsible for placing him in such a position of authority. To be sure, there will always be factors beyond the control of the commanding officer which will have their effects upon the squadron readiness, but even so his reaction to these factors will help to provide the mark of the man.

The pilot of a high-flying aircraft over New York City on a clear night may without too much difficulty identify mid-town Manhattan. At the same instant a pedestrian forcing his way through the crowds and dodging taxis while crossing Times Square identifies his position in relation to mid-town Manhattan also. The location is the same; the perspective is vastly different. Commanders high in the chain of command may well focus attention on the same problem areas besetting readiness as the commanding officer of a squadron,

but the squadron commanding officer is much more likely to be aware of the "taxi drivers" endangering his immediate progress.

Readiness problems in a squadron naturally segment themselves along departmental lines, i.e., Operations, Maintenance, and Administration. (For the sake of continuity, it is helpful to note that Operations includes the training function; Maintenance also encompasses supply; and Administration has personnel as a component function.)

Within a combatant squadron[9] it is usual practice to consider the operations department as the "line" department, while the others perform a "service" and/or a "staff" function. To some persons, readiness is and should be measured right in this department. The concept is prevalent enough that the two words "operational readiness" are as inseparable as Damnyankee in the deep south. Many of the books of original entry of the readiness reporting network are maintained within the operations department. The individual aviator's flight log book has recorded in it each flight that the aviator makes while attached to the command. At a glance, the commanding officer or his representatives can determine the date, duration, purpose, and general flight conditions of each flight made by each pilot. The information is summarized in the Master Flight Log for the entire squadron. The flight training syllabus of the squadron, derived from the type commander's Training and Readiness Manual, is administered by the operations officer. Records of the completion

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[9]And even in other types, as transport squadrons, to a somewhat lesser degree.

of each step of the syllabus are maintained by individual crew member and, where applicable, by complete crews. Thus it is possible to determine that Crew Number ONE has completed the instrument flight training phase of the syllabus and is now participating in various tactical exercises. It can also be seen that Crew ONE is qualified to land upon the aircraft carrier both day and night, but the co-pilot in this crew is lacking in qualifications in rocket firing. By means of the "weight factors" assigned each of these entries, percentage of readiness of this crew is computed and displayed. Similarly, results of ground training are tabulated. All entries and computations made fulfill the sole purpose of measuring - for the Commanding Officer and for higher authority - the operational readiness of the squadron.

The Commanding Officer has available to him in his Maintenance Department similar and even more detailed information on the material readiness of his squadron. Data is recorded on the forms illustrated in Figures 2 through 9, which are included for the primary purpose of disclosing the amount and detail of information collected. The manual entitled Aircraft Accounting System (OPNAV INSTRUCTION P5442.2A of 1 May 1960) prescribes the use of the forms and explains the reasoning of the system.[10] The Worksheet of Daily Transactions Reflecting Not-Ready Hours (Figure 2) is the fundamental document on which the readiness reporting system is based. Aircraft in the squadron's custody together with non-readiness data by model and side number are developed and summarized daily on the worksheet for posting to the

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[10] See also page 8

RK SHEET OF DAILY TRANSACTIONS REFLECTING NOT-READY HOURS

suggested format for modification where desired. This format is not available from stock.)

MODEL	DATE	PAGE COUNT PAGE OF PAGES	ACTIVITY

RCRAFT IN REPORTING CUSTODY AS OF 0001 HOURS

LINE 1.	ITEM 2.	OPERATING (A STATUS) 3.	NON-OPTG. (OTHER THAN A STATUS) 4.	TOTAL INVENTORY 5.	MISSION EQUIPPED	
					YES 6.	NO 7.
AA	NUMBER OF AIRCRAFT					•
BB	AIRCRAFT HOURS = (24 X LINE AA)	•	•	•	▨	▨
CC	POST • ENTRIES TO OPNAV "B" COLUMNS	A	B	C	▨	S

E NO.	JOB ORDER																								✓+X TOTAL	✓ FLYABLE	X NOT FLYABLE
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	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			

EEP					
	I. POWER PLANT	J. AIRFRAME	K. AVIONICS	L. ORDNANCE	M. OTHER
	O. GROUND SUPPORT	P. OAM./AWTG	Q. AMOP	R. OANFE	T. SELECTED

PAGE TOTALS	✓+X	✓	X
1			
2			
3			
4			
5			
GRAND TOTAL *(Post to OPNAV "B" Columns)*	E	F	▨

R-52808

Figure 2

Figure 3

DAILY RECORD OF A/C READINESS
OPNAV FORM 5442-10 (REV. 6-59)

"B"

REPORTING CUSTODIAN | MONTH AND YEAR | MODEL A/C

DAY	AIRCRAFT HOURS							HOURS NOT READY BY REASON (*Same hours may be shown in several columns*)											TOTAL A/C NOT MISSION EQUIPPED (A/C Days)	SELECTED REPORTING
								MAINTENANCE							GROUND SUPPORT EQUIPMENT AND SYSTEMS	DAMAGED OR AWTG DECISION	SUPPLY			
								STD. UPKEEP, EQUIPMENT AND SYSTEMS	SPECIAL UPKEEP—EQUIPMENT AND SYSTEMS					REWORK, STD. AND SPECIAL						
									POWER PLANT	AIR FRAME	AVIONICS	ORDNANCE	OTHER				AMDP	OANFE		
	OPERATING	NON-OPERATING (POOL)	TOTAL OPERATIONAL	TOTAL READY (C−E)	TOTAL NOT READY	FLYABLE PORTION OF COL. E	TOTAL FLYABLE A/C (D+F)													
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2																				
3																				
4																				
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25																				
26																				
27																				
28																				
29																				
30																				
31																				
TOTAL *																				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N						

** Post totals to "Zulu," OPNAV Form 5442-15, for model A/C concerned.*

Figure 4

AIRCRAFT FLIGHT DATA WORKSHEET
OPNAV FORM-5442-11 (REV. 4-60)

"C"

MONTH: ____________ 19 ____

PAGE ______ OF ______ PAGES

MODEL

DAYS	AIRCRAFT IDENTITY (*Side or Bureau No.*)	A			B							
		TOTALS THIS LINE			FLIGHTS DURING DAY OR PERIOD							
					1		2		3		4	
		FLTS	HRS.	LOGS.	HRS.	PUR-POSE	HRS.	PUR-POSE	HRS.	PUR-POSE	HRS.	PUR-POSE

DAYS	C								D															
	LANDINGS EACH FLIGHT								FLIGHTS AND HOURS, BY GENERAL PURPOSE *eg, A, B, etc.* EXCEPT R1, R2, R3, R4, R7 SEPARATE															
	1		2		3		4																	
	NO.	TYPE	NO.	TYPE	NO.	TYPE	NO.	TYPE	FLTS	HRS.	FLTS	HRS.	FLTS	HRS.	FLTS	HRS.	FLTS	HRS.	FLTS	HRS.	FLTS	HRS.	FLTS	HRS.

DAYS	E											
	LANDINGS BY TYPE											
			CARRIER									
	ARREST		TOUCH & GO		BOLTER		WATER		FCLP		FIELD	
	DAY	NITE	DAY	NITE	DAY	NITE	DAY	NITE	DAY	NITE	DAY	NITE

Figure 5

HLY A/C ACTIVITY REPORT (BUWEPS, FR) "W" OPNAV REPORT 5442-1W
FORM 5442-12 (REV. 4-60) PAGE OF

ING CUSTODIAN	LOCATION	CONTROLLING CUSTODIAN: BUWEPS FR	REPORT MONTH 19

/C MODEL SIGNATION *e.g. F8U-2P, T-28BD)*	FLIGHT DATA BY PURPOSE												LANDING DATA *(Land or sea)*		REMARKS
	"J" FERRY		"L" FLIGHT CHECK		OTHER ① *(Show codes in column heads below)*										
	FLTS.	HRS.	FLTS.	HRS.	FLTS.	HRS.	FLTS.	HRS.	FLTS.	HRS.	FLTS.	HRS.	DAY	NIGHT	

NT

NOTE: ① Use "General Purpose Code", e.g. A, K, Q; but if "R" show specific purpose (R1, R4, R7, etc.).

AUTHENTICATED *(Signature)* DATE

G-44183

Figure 6

A/C STATUS CHANGE REPORT
OPNAV FORM 5442-13 (Rev. 4-60)
Ref: Current edition of OPNAVINST P5442.2

OPNAV REPORT 5442-1 **X**

REPORT NO.

PAGE COUNT SUBMITTED
PAGE____ OF_______ PAGES

ACTION CODES:

CHANGE IN CUSTODY
A - Accepted by Navy
F - Receipt, end of Tour or Period
G - Receipt, start of Tour or Period
R - Receipt, Time in Tour or Period
T - Transfer

CHANGE IN STATUS
B - Overhaul damage
C - Repair damage, substantial
E - End of a period
H - Start of a period
M - Model designation change
S - Strike
X - Other status change

REPORTING CUSTODIAN

CONTROLLING CUSTODIAN

LOCATION OF REPORTING CUSTODIAN

DATE OF ACTION	ACTION CODE	MODEL DESIGNATION	A/C BUREAU NO.	STATUS CODE		SERVICE TOUR/PERIOD OR AM/PM CYCLE AND OPERATING PERIOD				REPORTING CUSTODIAN	CONTROLLING CUSTODIAN	(*See Ref.*) STRIKE				REMARKS (Authority or reason for reported action - if from BUWEPS to Air Command, show BUWEPS Priority number - if new A/C acceptance, show contract number)
						NO. OF	MONTH AND YEAR	NO. AUTH. EXTENS.	NO. INT. REW. AND P.A.R.			CATEGORY	EMPLOYMENT	CAUSE	DISP.	
A	B	C	D	☒	E	F	G	H	I	J	K	L				M
				FROM		☒		☒	☒							
				TO												
				FROM		☒		☒	☒							
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				FROM		☒		☒	☒							
				TO												

REMARKS:

AUTHENTICATED (*Signature*)

DATE

Figure 7

:NTORY OF A/C "Y" OPNAV REPORT 5442-1Y
/ FORM 5442-14 (Rev. 4-60) *INSTRUCTIONS: See current edition of OPNAVINST P5442.2*

(Reporting custodian)	LOCATION OF REPORTING CUSTODIAN	THIS REPORT AS OF 2400 LZT _____ 19 ____
(Controlling Custodian or CNO as required by OPNAVINST P5442.2)	TOTAL NO. OF A/C LISTED	PAGE COUNT SUBMITTED PAGE _____ OF _____ PAGES

A/C MODEL SIGNATION	A/C BUREAU NUMBER	A/C STATUS CODE	NO. OF TOUR OR PERIOD	ELAPSED MONTHS IN TOUR OR PERIOD	ACCUMULATED A/C FLYING HOURS (2)			TOTAL LANDINGS BY TYPE DURING THIS REPORTING PERIOD						
					IN TOUR OR PERIOD	SINCE ACCEPTANCE BY NAVY	TOTAL THIS REPORT PERIOD	CARRIER			WATER	FCLP	FIELD	
								ARREST.	TOUCH & GO	BOLTER				
A	B	C	(1) D	(1) E	(1) F	G	H	I	J	K	L	M	N	O

(1) For A/C anbject to progreaaive or airline maintenance:
Colnmn D - No. of prog. maint. CYCLE and OPTG. period e.g. (34, for 3rd. CYCLE and 4th. Period).
E - No. of Calendar moa. to date in period.
F - No. of flying houra to date in period.
(2) Round off to nearest whole hour.

AUTHENTICATED

DATE

G-44185

Figure 8

MONTHLY A/C READINESS AND ACTIVITY REPORT

OPNAV FORM 5442-15 (REV. 6-59)

OPNAV REPORT 5442-1

Z ULU

PAGE ____ OF ____ PAGES

REPORTING CUSTODIAN	LOCATION	CONTROLLING CUSTODIAN	REPORT MONTH AND YEAR	AUTHENTICATED *(signature)*	DATE

INVENTORY AND READINESS DATA BY A/C MODEL DESIGNATION	AIRCRAFT HOURS							HOURS NOT READY BY REASON *(Same hours may be shown in several columns)*										TOTAL A/C NOT MISSION EQUIPPED (A/C Days)	SELECTED REPORTING
								MAINTENANCE							GROUND SUPPORT, EQUIPMENT AND SYSTEMS	DAMAGED OR AWTG DECISION	SUPPLY			
								STD. UPKEEP, EQUIPMENT AND SYSTEMS	SPECIAL UPKEEP—EQUIPMENT AND SYSTEMS					REWORK, STD. AND SPECIAL					
									POWER PLANT	AIR FRAME	AVIONICS	ORDNANCE	OTHER				AMDP	OANFE	
("B" Totals)	OPERATING	NON OPERATING (POOL)	TOTAL OPERATIONAL	TOTAL READY (C—E)	TOTAL NOT READY	FLYABLE PORTION OF COL. E	TOTAL FLYABLE A/C (D+F)												
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T

FLIGHT DATA BY PURPOSE
(Enter an A/C model designation at the head of each column)

CODE	FLIGHTS [1]	HOURS [2]	FLIGHTS [1]	HOURS [2]	FLIGHTS [1]	HOURS [2]	FLIGHTS [1]	HOURS [2]	FLIGHTS [1]	HOURS [2]	FLIGHTS [1]	HOURS [2]	FLIGHTS [1]	HOURS [2]	FLIGHTS [1]	HOURS [2]
TP TOTAL ALL PURPOSES																
CO CARRIER OPERATIONS																

Enter in the "CODE" column the general purpose of flight "LETTER" code, per OPNAVINST 3760.8, e.g. A, C, J, etc.; but if purpose code "R" (Transport), use separate line for each specific purpose, e.g. R1, R4, R7, etc.

DO NOT ENTER TENTHS OF HOUR, ROUND OFF TO NEAREST WHOLE HOUR

LANDING DATA *(By A/C model(s) listed above.)*		DAY [3]	NIGHT [4]	DAY [3]	NIGHT [4]	DAY [3]	NIGHT [4]	DAY [3]	NIGHT [4]	DAY [3]	NIGHT [4]	DAY [3]	NIGHT [4]	DAY [3]	NIGHT [4]	DAY [3]	NIGHT [4]
A	FIELD CARRIER																
B	CARRIER: ARRESTED																
C	TOUCH AND GO																
D	BOLTER																
E	OTHER LAND OR SEA																

29

Figure 9

OPNAV B (Figure 4). Since maintenance is the major area in non-readiness reporting, the worksheet has been designed mainly about this activity. The worksheet is also designed to reflect not-ready time due to reasons of: Aircraft Maintenance Delayed for Parts (AMDP), Operational Aircraft Not Fully Equipped for Primary Mission (OANFE), and Ground Support Equipment. The "Daily Record of Aircraft Readiness" (OPNAV B) form contains a separate line entry for each day of the month as well as a total line which summarizes the month's activity. The worksheet of Daily Transactions feeds each line of the OPNAV B; and the OPNAV B feeds the Inventory and Readiness Data portion of the OPNAV Z (Figure 9). The Aircraft Flight Record and Worksheet (OPNAV C) (Figure 5) can be used in many special ways for local purposes. For example, for fighter squadrons one sheet might be used either for one day's flying by all aircraft or for one month's flying activity by one aircraft; running totals of accumulated flight data in the month, the squadron, the service tour of the aircraft; status changes, etc. The purpose of the Monthly Aircraft Readiness and Activity Report (OPNAV Z) is to provide information on the average number of aircraft in a squadron's custody, aircraft readiness, reasons (with quantitative measures attached thereto) for non-readiness, measures of flyability, and flight activity. An overall schematic diagram of the Aircraft Accounting System is presented in Figure 10. The data collected at the squadron level is passed up through the Administrative Type Commander (COMNAVAIRLANT in the preceding sections of this paper) where it is consolidated and summarized before forwarding to the Office of the Chief of Naval Operations. It

SCHEMATIC DIAGRAM OF THE AIRCRAFT ACCOUNTING SYSTEM

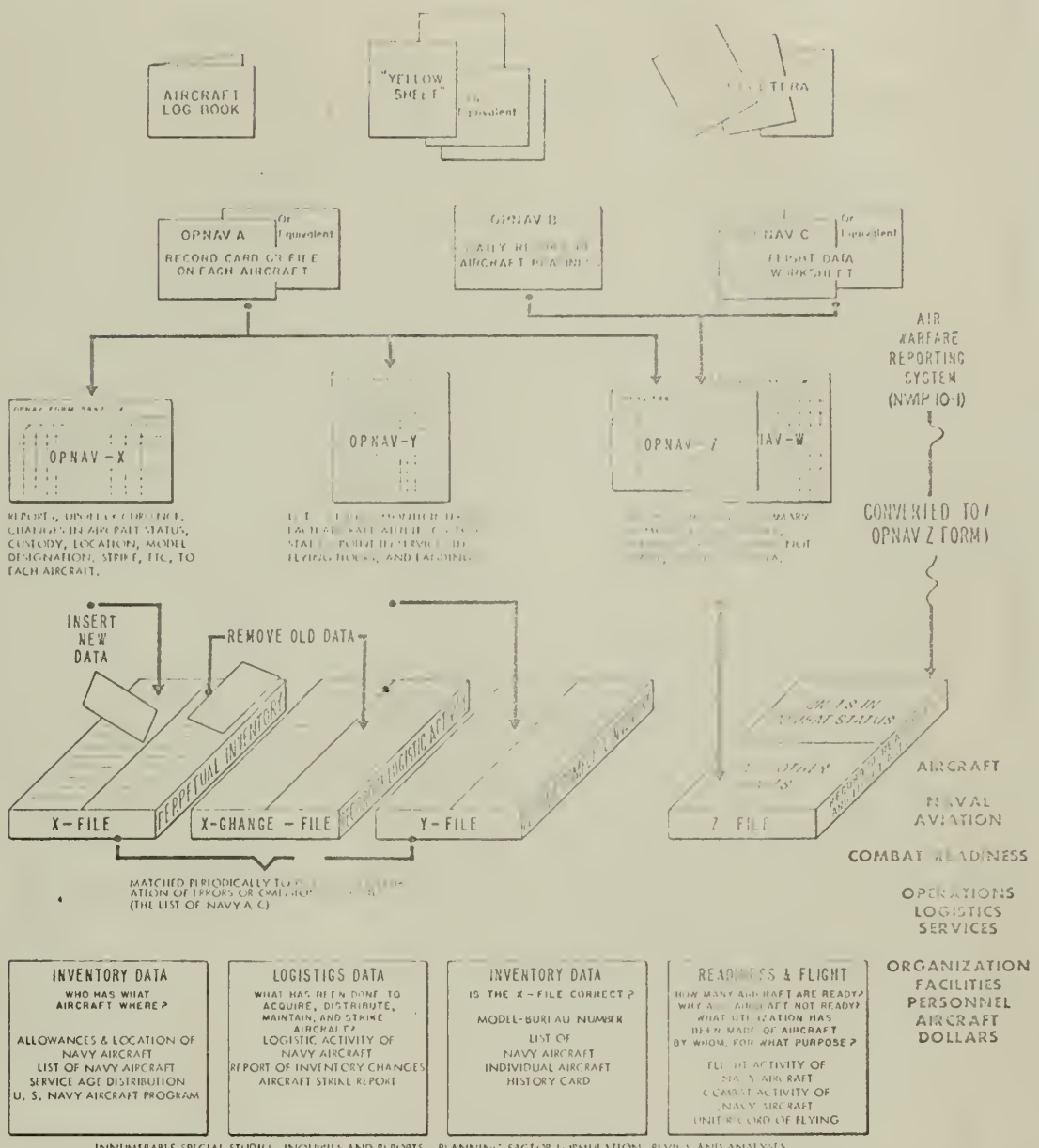

Figure 10

can readily be seen that the squadron Commanding Officer has at his disposal all of the "building blocks" necessary for him to assess the material readiness of his command.

Within the maintenance department of the squadron is the material (or supply) division. All financial accounting functions of the squadron are centered here. The major concern in this area is the administration of the BRAVO Allotment, which is the sum of money allotted to buy aviation fuel and lubricating oil, flight clothing, office supplies, hand tools, electronic spare parts, and a certain relatively small variety of aviation spare parts. By far the largest portion is accounted for in expenditures for fuel. Daily reports are made to the Commanding Officer on the status of this allotment: the total amount spent to date for the current month and the current quarter, and the balance remaining. Usually, the Commanding Officer also keeps himself apprised of the net amount spent per flight hour (fuel and lube oil costs per flight hour). This information is obviously useful in assisting the Commanding Officer in planning his operations for the remainder of the accounting period. The only other funds allotted to the squadron are a relatively small sum sub-allotted by the "landlord" (air station or ship) from that command's ALFA Allotment and limited to expenditures for minor maintenance and repair (as painting) of the spaces occupied. The material division also prepares priced requisitions for all other aviation spare parts and direct operating expenses chargeable to the squadron; however, there is no limitation placed on these expenditures. Detailed reports are not required by higher authority, and the total expenditure

from the BRAVO Allotment is the normal report. This report is usually made monthly, but sometimes is required at weekly intervals toward the end of the fiscal year or in times of extreme paucity of funds.

Personnel administration is handled within the administrative department. Explicit instructions are in force regarding the accounting for personnel transfers and receipts. The individual personnel record of each officer and enlisted man in the squadron is the repository of detailed information covering such areas as disciplinary action, basic education, training completed, dependency status, longevity in a given pay grade as well as in the Navy, and numerous other items of information normally associated with personnel administration. In addition, collective information for the entire command is available in the personnel division. This includes personnel allowances, manning level by rate and pay grade, and anticipated receipts and transfers.

Since the squadron is oriented toward operational readiness, the Commanding Officer and his superiors are very likely to assess the squadron's readiness primarily on the basis of results of competitive exercises, the annual operational readiness inspection, and, to a lesser degree, the annual administrative/material inspection. Fleet-wide, the best squadron of its type each year is recognized by the award of the battle efficiency pennant known as the "E".

Summary

To a certain extent, readiness is an intangible not unlike "esprit-de-corps." More concretely, it has been closely defined beginning at the very highest command levels. An excursion through

the chain of command from the Chief of Naval Operations to the squadron Commanding officer has disclosed that the extremely wide variations in the interpretations of the definitions stem principally from differences in perspective rather than differences in concept. A wide range of measurement units is available to assist in the assessment of the conditions of readiness existing in a squadron in the three major areas of Training, Material, and Personnel.

In the language of Hitch and McKean[11], this chapter has been devoted to an examination of "gains". The next will consider "costs".

---

[11]Charles J. Hitch and Roland N. McKean, The Economics of Defense in the Nuclear Age, Harvard University Press, Cambridge, 1960, p 165: "The consequences of an action fall into two types - (1) those positive gains which we like to increase, or the achievement of objectives, and (2) those negative effects which we like to decrease, or the incurrence of costs."

CHAPTER II

COSTS

Enquiries into the problems of readiness will normally draw almost one hundred percent response from the officer corps of the Navy and the Marine Corps. Almost everyone has an opinion, and most are willing to share that opinion at the drop of a question. Conversely, a tried and true method of conversation squelching is to attempt to inject dollar costs into the same discussion. The most favorable reception is usually indifference...the indifference of silence. A snort of a sneer covers the middle ground lying between disinterest at one end of the spectrum running through disbelief to antagonism at the other end. Antagonism is not infrequently accompanied by loquaciousness strongly seasoned by emotion. Exemplifying this attitude is the anonymous person whose comment was that, as far as he was concerned, "readiness" and "cost" should not be used together in the same sentence as the two terms are incompatible!

Popular or no, cost data can be accumulated and set over against the positive gain - the achievement of readiness. It shall be the purpose of this chapter to explore certain of the cost data which are now, or might be, collected and related to squadron level operations. ("Operations" is used here in the broader sense to include the actions encompassed by the Operations, Maintenance, and Administrative Departments of a squadron.) Comment concerning the possible usefulness of this data will be reserved for a later chapter.

Perhaps no more certain means exists for alienating the affections of the "man with the gun" than the introduction into the picture of "the man behind the green eyeshade" - the accountant. Nonetheless, it appears fitting that a discussion of various methods of accumulating and of measuring costs should be prefaced by at least a slight obeisance in the direction of the cost accountant. A widely used text on accounting defines cost accounting thusly:

> Cost accounting represents an accounting in detail for the unit cost of providing a service or of producing or selling products. Cost accounting emphasizes the determination of the cost of goods, processes, divisions, or departments rather than the accounting for the business as a whole.[1]

Perhaps Nickerson approaches the subject in a manner that, while not endearing, is more acceptable to the "operator."

> In the early stages of its development, cost accounting dealt in large part with factory costs for use in inventory valuation, profit determination, and pricing. These are still important aspects of cost accounting, but the field has been expanded in areas such as cost control, budgeting, and cost determination for a variety of managerial uses and has been broadened to include administrative expenses and distribution costs and the cost and control problems of non-manufacturing businesses.
>
> .....
>
> Information provided by cost accounting is used for a variety of purposes by top management and by executives and supervisors at lower levels. This information is of course of no value unless it is used, and used properly. Effective use involves an understanding, on the part of the supplier of the information, of the purpose for which it is to be used. Effective use involves also an understanding, on the part of the user, of the basis and possible limitations of the information supplied. The useful accountant therefore not only is an "expert accountant" but is well versed in the basic operations and operating problems of his company. In turn, executives who use cost accounting information are able to do so more effectively if they have a basic understanding of this type of accounting.

---

[1]Ralph D. Kennedy and Frederick C. Kurtz, Introductory Accounting, Scranton, Pennsylvania: International Textbook Company, 1960, p 4

> Although cost accounting has many ramifications, its central theme is to provide information, largely in the area of costs, which will be useful in controlling the operations of a business.[2]

This is by way of permitting the accountant to "get a foot in the door," so to speak, in order that cost accounting type information may be introduced into the discussion. Again, possible merits of the particular cost information introduced will be considered at a later point.

Figure 11 portrays some of the more obvious costs associated with the achievement of readiness and suggests some relevant units for measuring these costs. This by no means purports to be a complete listing, though some consideration will be given to certain omissions and the reasons therefore.

Bravo Allotment

The most familiar - indeed, one of the only - costs presently associated with squadron operations is the expenditure of the Bravo Allotment. As indicated in the preceeding chapter, the Bravo Allotment is that amount of obligational authority toted out to the Commanding Officer of the squadron which he may utilize for purchase of aviation fuel and lubricating oil, flight clothing, office supplies, hand tools, electronic spare parts, and certain aviation spare parts.

Employment schedules, prescribed by the operational commander one or more levels in the chain of command above the squadron commanding officer, are distilled by the operations department to flight hours. For example, the employment schedule for the next "at sea" period of Tash Group ALFA may prescribe an anti-submarine problem requiring two

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[2]Clarence B. Nickerson, Cost Accounting, York, Pensylvania, The Maple Press Company, 1954, p 1

A Measure of the Cost of Aircraft Squadron READINESS in the cold war

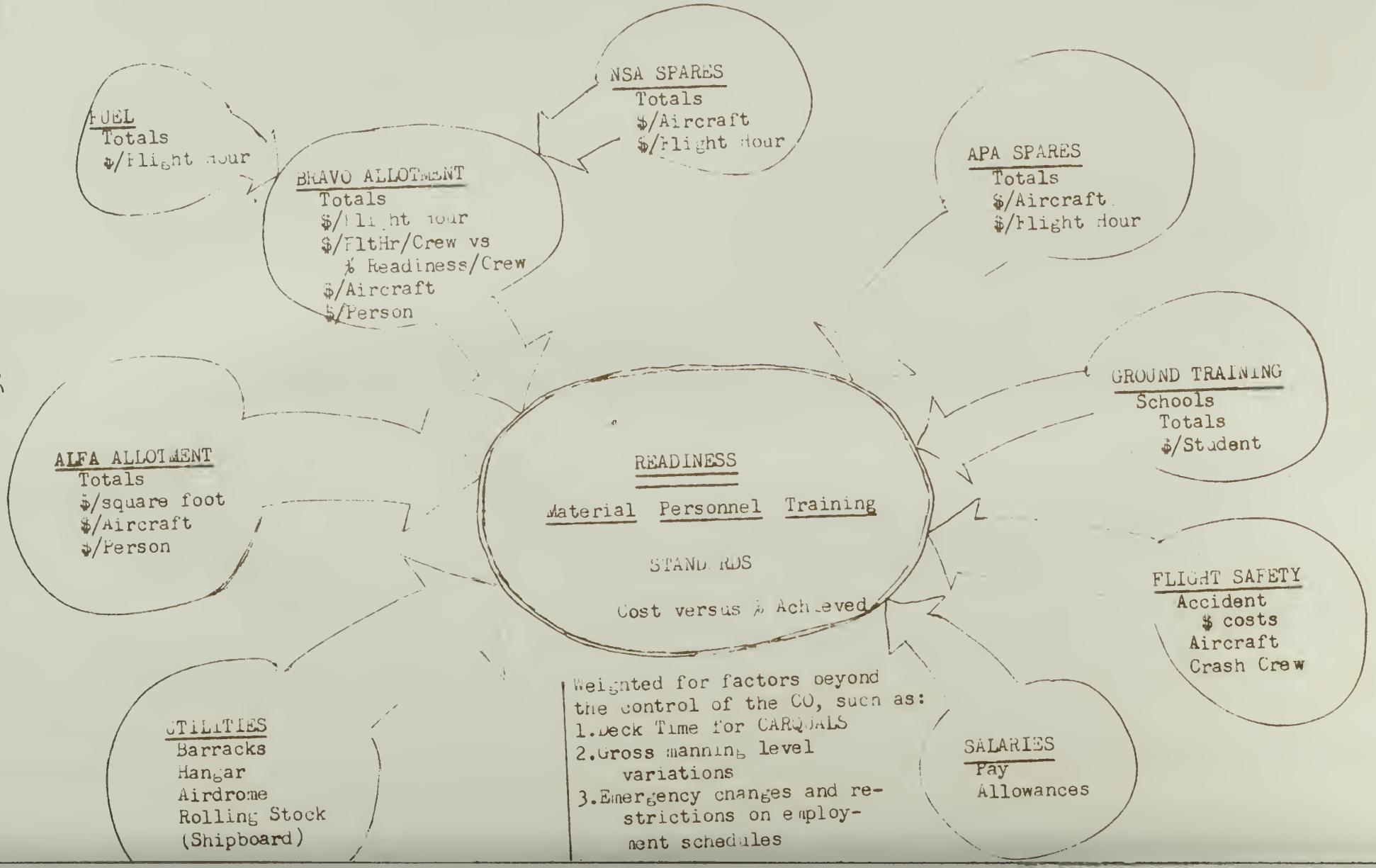

Figure 11

aircraft on station for twelve consecutive hours. Assuming that each aircraft will be scheduled for a four and one-half hour flight, that one-half hour transit time in each direction must be allowed, and that succeeding flights must relieve "on station," this twelve hour exercise is translated into a requirement for thirty-two flight hours. This requirement is also expressed in dollars by applying the recent historic cost of fuel and lubricating oil per flight hour. Carrying the same example forward and assuming a cost of $24.00 per flight hour, this twelve hour exercise may be expressed as an anticipated cost of $768.00. Certainly no accountant is needed for these computations. The problem is made more tedious if four concurrent exercises of varying lengths are brought into the picture, and yet it still could not be classed as complex. The entire employment schedule for the "at sea" period can be costed out to provide the Commanding Officer with an estimate of the fuel and lubricating oil costs which will likely be incurred. This amount deducted from the total Bravo Allotment for the period will provide an indication to the Commanding Officer of the remainder which, in some aspects, resembles a controllable overhead expense allowance. True, an electronic tube failure generates an immediate charge against this "allowance" that can hardly be assumed controllable if the tube is to be replaced to make the equipment operative. To a lesser extent, the same argument may be applied to the purchase of hand tools for general maintenance on the aircraft. On the other hand, flight clothing can usually be continued in use at least to the following month - and another accounting period - while office supplies may be spread thinner and replenished less frequently.

This component of the Bravo Allotment is commonly spread over the accounting period and expressed in relation to anticipated flight hours as a gross cost per flight hour; that is, it is added to the fuel costs.

Though the above discussion exhausts the uses to which the Bravo Allotment statistics and data are now put, several other possibilities present themselves. For example, it might well be meaningful to express the expenditures in relation to the number of aircraft supported or the number of persons attached to the squadron. Since fuel charges may be looked upon as a direct cost of operations, and since the "product" resulting from these operations is readiness, it should also be worthwhile to form certain ratios and comparisons of these costs to readiness. Figure 11 suggests one such comparison might be expressed in terms of dollars per flight hour versus percentage of readiness achieved. Since readiness is usually computed within the squadron for individual pilots or flight crews, the above expression may be "divided" by pilots or flight crews, in which case it would become:

$$\frac{\$/\text{flight hour}}{\text{pilot}} \quad \text{versus} \quad \frac{\%\text{readiness}}{\text{pilot}}$$

If the same pilot or crew flies the same aircraft on each flight, as is frequently the case in a multi-engine land based squadron, the term "pilot" in the left side of the above expression can be personalized just as it should be in all cases for the right. The expression might read thus for Crew Number ONE:

$$\frac{\$38.22/\text{flight hour}}{\text{Crew ONE}} \quad \text{versus} \quad \frac{87\% \text{ readiness}}{\text{Crew ONE}}$$

In similar fashion, the Bravo charges might be related to an

individual aircraft (instead of to the total number of aircraft as suggested previously). Such a relationship would pinpoint the "gas hog" aircraft and the "hangar queens" - the aircraft which harass the maintenance crews by repeated mechanical deficiencies. It is true that major offenders are usually well known, but trends and minor discrepancies may go unnoticed for some time especially with around-the-clock maintenance crews and flight operations.

Alfa Allotment

As the Alfa Allotment is chargeable for facility maintenance and minor repairs and is not directly associable with flight operations, striking of a comparative figure such as dollars per flight hour would probably prove meaningless at the squadron level. However, flight hours of all aircraft at a given base as well as total numbers of aircraft tenanted at a base provide a pretty fair indication of the tempo of operations of the overall facility. For this reason, a presentation of dollars expended from the landlord's Alfa Allotment per aircraft may be of considerable value to the landlord. Perhaps a more valid measurement here would be in terms of dollars per square foot of area maintained. Such a unit would be more relevant to the condition of the buildings on which the money is spent, while the condition of the buildings is often independent of the operations of the units housed therein.

Other Costs of Readiness

No other costs are charged directly to the individual squadron at the present time; that is, the Commanding Officer is not accountable

to higher authority for a specific sum allotted to the command as in the case of the ALFA and BRAVO Allotments. To be sure, there are regulations, directives, instructions, and correspondence exhorting the Commanding Officer to exert all reasonable control over expenditures, but "reasonable control" is not defined in dollars.

APA Spares. - Sufficient accounting information is presently included on requisitions for aviation spare parts procured under the Appropriations Purchases Account (APA Spares) to permit central supply activities to collect usage data needed to determine scope and range of spare part support by type of aircraft. These requisitions are priced, so cost data is also available to central supply activities. This information, however, is not currently disseminated to squadrons, nor are the squadrons required to use, collect, or report data on APA spares in any form other than the individual requisitions. Here again this cost could be set against flight hours to provide the commanding officer with information pertinent to the cost of readiness. A very simple tabulation of APA costs by individual aircraft, identified by Bureau Number (the serial number of the aircraft) would show at a glance the comparative dollar value of spare parts support going to each aircraft assigned to the squadron. It is worth noting at this point that man-hours of maintenance expended on each aircraft is recorded under the provisions of the aircraft accounting system (OPNAV Instruction P5442.2A)[3]

Salaries. - This points toward the next large area where costs are not now considered at the squadron level: Manpower. Within recent years

---

[3]See Figure 2

few squadron Commanding Officers have been blessed with what they deem a sufficient number of men to carry out satisfactorily the mission assigned them. Two wars and widely varying personnel policies have wreaked havoc with the distribution of personnel by rank, rate, and rating in the overall structure, and this has inevitably carried over into every command. Numerous control devices have been instituted, most of them incorporating some "share-the-wealth" features. This can perhaps best be seen by examining the workings of the Enlisted Personnel Distribution Office, Atlantic, whose title is usually shortened - for obvious reasons - to EPDOLANT. This office is the central distribution control point for all enlisted personnel assigned to all units of the Atlantic Fleet. Assume that there are billets established for 1,200 Aviation Boatswain's Mates throughout the Navy with a rate distribution as follows:

Pay Grade	Rate	Billet Number	On Board Count
E-7	Chief Petty Officer	200	300
E-6	Petty Officer First Class	300	400
E-5	Petty Officer Second Class	300	200
E-4	Petty Officer Third Class	400	100

EPDOLANT would, in this simplified example, distribute Aviation Boatswain's Mates to its activities at the rate of 150% of allowance of Chiefs, 133% First Class, 66% Second Class, and 25% Third Class. Though there is a differentiation made between the percentages assigned to shore activities as compared with fleet activities, it is interesting to note that, under the Level Readiness concept, no one fleet activity is assumed to be any more deserving of special consideration than any

other fleet activity. The above distribution plan carries several titles depending upon the speaker and the level at which the computations are made and applied, but suffice it to call it Manning Level here. Many commanding officers are only vaguely aware of the manning level idea and the control that it exerts over the number of enlisted personnel assigned to their commands. This lack of understanding or awareness exhibits itself in unfounded complaints of favoritism and in fruitless requests to "bring me up to allowance." It might seem strange to business men, who assertedly are interested in reducing payroll costs to the smallest figure practicable for a given volume of business, to hear the commanding officer plead for more men. If so, it would probably be nothing less than startling for the same business men to learn that probably not a single squadron Commanding Officer in the entire fleet knows what his payroll costs were for the most recent two weeks pay period. On the other hand, almost all commanding officers are acutely aware of not only total numbers of men assigned to their command but also of shortages by rate and rating. This same disinterest in payroll costs in dollars and acute interest in personnel shortages is prevalent right up through all levels of operational command in the navy. To be sure, payroll costs are considered and calculated in various offices in the Office of the Chief of Naval Operations and in the Bureaus of Naval Personnel and Supplies and Accounts where they enter into budget calculations, but rarely are payroll costs even there related to a particular squadron or any other similar unit command.

If payroll costs were introduced for the consideration of the squadron commanding officer, there would indeed arise many problems

from the variables associated with differences in allowances, longevity, hazardous duty pay and the like. One possible approach to these problems is the use of the cost accountant's practice of standard costs. This might be accomplished by applying the Navy Basic Standard Military Compensation Rate Table[4] to the Personnel Allowance of the squadron and then applying the overall manning level percentage to the resultant. The end result would be a "standard payroll" for the period under consideration. Variances from this standard would indicate to the commanding officer several possibilities: (1) variations of his command from the manning level, giving him, perhaps, good grounds for requesting additional men; (2) departure from the average longevity, which in turn might presage a significant lack - or abundance - of experience available to him; and, possibly related to this, (3) an explanation of changes in personnel and training readiness.

Whatever the approach, notwithstanding the problems encountered, salaries of military personnel undeniably constitute a significant portion of the total cost of producing squadron readiness.

Ground Training. - Apart from and supplementary to the unending training program that is administered within a squadron are the numerous training schools available to officers and men through the Navy. Under existing practices, the commanding officer is guided by several criteria

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[4]Navy Comptroller Manual, Vol. 3, Appropriation, Cost and Property Accounting (Field), NAVEXOS P-1000, pp 96-97. Weighted averages were obtained for this table by using basic pay and allowances and the best available data as to numbers of personnel in each pay grade including longevity. The elements of pay and allowances included in addition to longevity are quarters, subsistence, maintenance clothing allowance for enlisted personnel and the Government's contribution to F.I.C.A. taxes.

in determining how many persons to send to which schools. First, there are mandatory quotas assigned by higher command to certain schools such as the School of Naval Justice; Atomic, Biological, and Chemical Defense School; and certain weapons delivery training. Then there are request quotas for training in tactics, such as the Anti-Submarine Warfare Tactical School in Norfolk, Virginia; and in equipment operation, such as the Fleet Airborne Electronics Training Unit, also in Norfolk. Completion of courses of instruction at these types of schools not infrequently is directly translated into increased readiness. Thirdly, there are quotas available to schools providing courses of instruction that may be classed as unquestionably useful but not necessary when viewed from the standpoint of increased readiness. Examples include driver training, stenomask operation, and motion picture projector operator training (though the latter is required in minimum numbers).

Conspicuously absent from the list of criteria guiding the commanding officer is any reference to the dollar cost of training. He most assuredly considers the time lost to the squadron by the absence of the men undergoing training; and he may be made aware of the cost of transporting the student from his command to the school and return, but this awareness - if it exists at all - probably stems from the difficulty in getting travel authorization. However, insofar as the direct costs of training in such terms as dollars per student are concerned, the squadron commanding officer is not involved nor held in any way accountable, as by allotment, for costs incurred.

Incidental to this discussion, it may prove interesting to note

that very little more has been done about collecting costs of training at the various schools mentioned than has been done about measuring and collecting the costs of readiness in an aircraft squadron.

Purposely excluded from this discussion have been the costs of education - as distinguished from training, and the costs of comparatively long term training such as would interrupt (by permanent transfer) a tour of duty in a given squadron. Costs of this nature, even if they could be accurately measured, would not be equitably allocable to a single squadron inasmuch as the benefits derived from this type of education or training should be "depreciated" over the entire span of a man's career.

Utilities. - Here is an area where many well-intentioned directives fall by the wayside in the onrush of everyday living. At first glimpse one might wonder why a squadron is not billed directly for the utilities it uses. After all, light, gas, and water meters are installed on every home, and consumers are simply billed for the amount used. Why not do the same on every hangar? It would appear axiomatic that a commanding officer would be more mindful of controlling waste if each month there crossed his desk a bill for utilities. In some cases this would undoubtedly work. There are a few squadrons that occupy a hangar or - more likely - half of a hangar for months and even years. Such squadrons, however, must certainly be classed as an insignificant part of the whole. Most squadrons either spend a considerable portion of their time operating from ships or deployed to overseas bases. It is not at all unusual for a squadron to be billeted at an entirely different hangar upon its return from aboard ship or overseas; in fact,

it might not even return to the same base. Further, squadrons come in a variety of sizes just as do the hangars. One squadron occupying half a hangar might well be displaced by two squadrons which must share the same total space. Whatever else might accrue to a decision to meter utilities to squadrons, it would keep a large crew employed in installing meters. Alternative methods might well be explored, however. Investigation might disclose a valid statistical means of assigning utilities costs such as on the basis of square feet or cubic feet of area occupied, number of men assigned, or even number of electrical outlets or wash bowls, showers, and toilets.

Lest this area of cost control seem entirely too radical, it is proper to note that even superficial questioning of Public Works Department personnel from several air stations elicited several proposals, all claimed feasible. One, for example, had devised a plan for billing the operations department of the air station for all utilities consumed in the physical area occupied by all squadrons on the station. (A supporting contention here was that such a physical area is both fairly well-defined and of reasonably constant size.) The station operations department would then in turn bill squadron users. Whatever the statistical norm chosen, since the total bill and the total area, cube, or number of people involved would be contained in more meaningful parameters, the resultant charge to the individual squadron would be more defensibe.

Two other "use charges" have been included in the Utilities area of Figure 11, though they are not usually thought of in the same manner as gas, lights, and water. The first of these is the airdrome.

(see also Flight Safety below.) In a very real sense the costs of maintaining runways, taxiways, and parking ramps; field lighting; and control tower operations are expenses directly contributing to squadron readiness. Any contention from the scoffers that a given air station would continue to operate regardless of the presence or absence of a single squadron should be considered from the other viewpoint as well: the squadron could and would continue to operate from some air station in the absence of the given station. This in no wise simplifies the problem of costing the maintenance to the end user, however. One of the few apparent means of prorating the cost on an equitable basis is to base the charge on the number of take-offs and landings each squadron contributes to the total for the field for the accounting period. This data is not now collected, and, on other than a statistical basis, would doubtless require the employment of additional personnel in the control tower. The other "use charge" is attributable to the operating expense of the various pieces of rolling stock assigned to a squadron - trucks, towmotors, bomb trailers, auxiliary power units, etc. Fuel and maintenance costs of operating these vehicles is not now but readily could be charged to the ALFA Allotment or sub-allotment of the end user rather than to the ALFA Allotment of the supporting air station. Such a procedure would associate the cost more closely with the readiness to which it contributes.

Flight Safety. - The Naval Aviation Safety Center in Norfolk, Virginia, has produced literally thousands of pronouncements stressing flight safety as a fundamental precept of a pilot's way of thinking, acting, reacting - in short, a way of life. This does not by any means exclude

the safety center's consideration of the dollar costs of flight safety - or the lack of it. The basic instruction governing the reporting of aircraft accidents (OPNAV Instruction 3750.6 series) contains detailed procedures for computing the approximate dollar costs of accidents and for reporting them as part of the overall report. Weekly summaries of aircraft accidents are published by the Safety Center, and prominently displayed in these summaries is the estimated total cost of all aircraft accidents throughout the Navy for the period covered. No means of allotting sums of money to cover the costs of aircraft accidents presents itself, if for no other reason than this would carry a connotation of approving accidents up to an allotted amount.

There are other contributory costs of flight safety, however, that should be considered, principal among them being the cost of operating and maintaining the crash crews required at each field from which flight operations are conducted. This expense is not unlike the use charge for the airdrome discussed earlier. Direct materials used in firefighting or rescue operations at the scene of any one accident could be costed to the activity having custody of the aircraft involved. On the other hand, all users of the field have potential protection provided at all times. Charges could be made to the squadrons on the basis of either total take-offs and landings, or, since ground operations are also involved, on numbers of aircraft assigned during the accounting period.

The thoughtful reader will quickly realize that the items discussed up to this point by no means exhausts the possibilities of costing readiness. The brief section devoted to flight safety, for

instance, hints that initial procurement and replacement costs of the aircraft themselves should be considered. Similarly, initial costs of the installation (hangars, shops, barracks, runways, etc.) have not been considered. Both of these major costs are analogous to capital expenditures of a private business or industry, just as is the installation at a naval shipyard or printing plant. Since the United States Congress has seen fit to deny the military services whatever benefits might be derived from "ownership" of capital assets in operating industrial activities (as those operating under the Navy industrial Fund concept), no effort is made herein to justify such "ownership" of capital assets as aircraft and air stations.[5]

Another cost arises in connection with pay and allowances. Married officers receive an allowance for rental. It is graduated to increase with increase in rank. Enlisted men receive not only a graduated rental allowance but also additional amounts based upon the number of dependents. It was suggested that statistical sampling would be an approach to solving this variation in pay costs to the individual squadron. Even so, note with care that a variation of forty persons from the "average" referred to in the footnote under Salaries, would probably have an aggregate effect of at least $5,000 per month. An even greater variant, however, enters the problem when one considers medical care not only of the service member but most especially of his dependents. It would seem that even assuming that a workable

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[5]But see Navy Comptroller Manual, Vol. 3, Chap. 6, Sec. IV entitled "Depreciation (Industrial-Commercial Activities Only)", pp 6-75-6-79

method could be devised to allocate medical care costs of dependents to a squadron nothing profitable in terms of measuring the costs of readiness would be gained by the exercise.

Summary

This chapter has considered some of the costs of achieving readiness in an aircraft squadron. Some of these costs are now measured, as is the case with the ALFA and BRAVO Allotments. Additional means of measuring these costs and relating them to readiness have been noted along with some of the areas that are not now costed to the ultimate user, the squadron. Finally, several other areas have been mentioned and classed as "out of bounds" either by reason of political decision in similar areas or because of inability to relate the costs to squadron readiness.

CHAPTER III

PROBLEMS AND USES OF COSTS OF READINESS

The operating forces of the Navy are filled with men-in-a hurry who might well ask at this point: "So what? There is readiness, and there are costs. But I don't know how much readiness is needed, and I don't know how much it should cost. Do you?" Of course this attitude is not unlike that of the man who refused to go to church because he recognized so many sinners in the congregation. Hitch and McKean must have encountered this sort of opposition, for in discussing the problem of determining the size of the defense budget they make this statement:

> In brief, deciding upon the defense budget is a tremendous task that must be performed under difficult circumstances. We cannot expect to identify or achieve "optimal" solutions: we should have no illusions on this score. Nonetheless, looking at the problem in the right way can aid us in reaching better solutions.[1]

Later, in directing attention to the selection of the scale of defense program:

> ...we can devise exhibits and analyses that facilitate weighing the gains and costs of alternative program-sizes. In deciding how much (if any) penicillin to buy, a man with pneumonia does not know precisely how much he values good health, how to assess the risks, or precisely what the side effects will be; but it helps a lot to know how much penicillin costs and what effect it has on pneumonia.[2]

Many of the cost of squadron readiness <u>can</u> be measured. The fact that <u>all</u> costs cannot be measured in no way invalidates those which can. Now

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[1]Hitch and McKean, op. cit., p 46

[2]IBID., pp 51-52

it is an entirely separate issue to decide how many, if any, of the costs discussed in the previous chapter should be measured at the squadron level and how many, if any, should be measured at other levels and applied against the readiness of a given squadron.

It would be naive indeed to assume for a moment that this study is unique in investigating the possibility of relating costs to readiness. The idea is not so novel that it has failed to occur to others. It follows that some reasons have been developed that have been deemed sufficient to overcome arguments that have been advanced before. The next step should be to familiarize oneself with such reasons.

The Navy Comptroller Manual is a logical place to start because it is here that one finds operations viewed from the standpoint of the accountant, but with a strong counterbalancing force of accounting viewed from the standpoint of the operator. The opening paragraphs of Volume 3 of the manual point out that "for accounting purposes, it is convenient to divide 'Navy and Marine Corps activities' into shore activities and operating activities."[3] (Underscoring mine.) This division is arbitrary in some cases, and the reader is warned that it should be applied only in connection with the accounting instructions contained in Volumes 2 and 3. Specifically, "this division must not be interpreted as having any implication with respect to command responsibilities, administration, or any function other than determinations related to accounting instructions."[4] Succeeding paragraphs point to

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[3]Volume 3, paragraph 031000 "Basic Classification."

[4]IBID., paragraph 031001, "Scope of Classification."

some of the bases for classification of an activity as part of the operating forces, to wit, generally the organization must be of such type that it would be actively engaged in a war or other engagement, and normally a certain condition of mobility is expected. Almost without exception, operating forces employ no civilian personnel. The description could hardly fit better if it had been written especially for an aircraft squadron.

Proceeding further to accounting responsibility for units of the operating forces, the manual has this to say:

> Since almost all of the activities classified as operating forces require no civilian payroll, it is possible to devise controls over charges that do not demand the assignment of a closely related accountable activity. The official accounting for supplies and equipage allotments of the active fleet, including Naval Reserve training ships assigned to the active fleet, has been assigned to the Navy Regional Accounts Offices, Norfolk and Oakland, primarily for the reduction of accounting effort afloat.
>
> .....
>
> Except for clothing and small stores, ship's store material, and transfers to ships performing Navy Stock Account (class 207) accounting, all issues of materials to operating forces are expended from the stores account by the issuing activity. Therefore, the major accounting consideration for the operating forces is the control of allotment or operating target fund charges.[5]

The ideas expressed in the first two sentences excerpted above are strange bed-fellows. An "accountable activity" is described as an activity that (1) has a fiscal office as an organizational component and (2) is designated to perform accounting. The plain implication here seems to be that civilian payrolls constitute a basic reason for accounting to the extent that without such a payroll there is no need for accounting. The second sentence states a very plausible reason

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[5]IBID., paragraph 031200 "Accounting Responsibility," and paragraph 031201 "Accounting Functions."

for assigning designated Navy Regional Accounts Offices as the accountable activities for fleet units; that is, "primarily for the reduction of accounting effort afloat." The latter portion of the excerpt confirms the earlier statements in Chapter 2 that financial accounting responsibility at the squadron level is limited to accounting for the ALFA and BRAVO Allotments.[6]

All other arguments against "accounting" in the operating forces pale in the shadow of the idea prevalent in the preceding quotations: keep the operating forces problems to a minimum - "streamlined" is a term frequently applied - and let them worry only about being ready to fight; let the shore activities worry about the cost. There are good reasons why this approach should be successful, not the least significant of which is the fact that there is fairly frequent transfer of military personnel from the operating forces to the shore activities and back again. There is a potentially serious shortcoming in this reasoning, however, stemming from the very bedrock of philosophy of our government; that is, complete civilian control over the military. Stated in another way, the man who holds the purse does not wield the sword. Granted, this may seem far removed from the cost of squadron readiness; but let the military man step forward who can state with assurance thecost of adding a third attack carrier to the two already maintained on station at all times in the Sixth Fleet in the Mediterranean. Or what trade-off, if any, is necessary in reducing flight operations to compensate for the increase in Polaris submarine forces? Such problems could be more readily mastered, by either civilian or military man,

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[6]But attention is invited to the "Aircraft Accounting System," discussed in Chapter 1. "Accounting effort afloat" is more extensive there than in the allotment accounting.

if component costs were known. Lacking these costs, the planners must enroll in the difficult, and ofttimes expensive, school of experience and major in the study of trial-and-error.

Before the operator, the member of the operating forces, will readily accept additional accounting responsibilities, he will likely require satisfactory answers to two questions: What will it cost me? What will I get out of it? Of course, he will probably be thinking of the cost and the return not in terms of dollars but in terms of men and equipment. But, whatever the terms, if the questions are asked, the battle is half won. Those are the selfsame questions that any accounting procedures should be attempting to answer for the operator. The operator's often expressed fear of and distaste for the possibility of being "taken over by the accountants" has largely blinded him to the possibilities of using the information available to him through accounting procedures. He is wont to look upon complicated accounting systems, such as that established under the Naval Industrial Fund, and generalize that all accounting systems must be complex. Double entry bookkeeping injected into the operating forces is very likely to be greeted with the charge of accounting for the sake of accounting. The obvious point to stress in winning support for the adoption of <u>any</u> accounting procedures in a squadron, then, should be simplicity. How well do the various possibilities of measuring costs discussed in the previous chapter measure up to this criterion of simplicity?

Consideration of Figures <u>2</u> and <u>5</u> indicate that all of the measurements discussed incident to the BRAVO Allotment and APA Spares, except one, might well be incorporated into the "Worksheet of Daily

transactions Reflecting Not-Ready Hours" or OPNAV C, "Aircraft Flight Data Worksheet". The forms would still be completed entirely within the Maintenance Department of the squadron, as the material division is a part of that department. It is estimated that the entire effort would require no more than one-half of one man-hour per day to record. The one exception mentioned above is the tabulation of dollars per flight hour per pilot (crew) versus percent readiness per pilot (crew). Either the OPNAV C or "document of original entry", the "Naval Aircraft Flight Record" (OPNAV 3760-2) commonly called "yellow sheet") could readily be used to record the fuel and oil used per aircraft per flight and that figure extended to read in dollars and cents. This would then be combined with the NSA and AFA Spares costs collected as suggested above. The net and gross costs per hour would be prepared in the Maintenance Department for forwarding to the operations department where it would be collated with the readiness percentages and displayed on the status boards that are common to all operations departments. Entries to this figure would probably not be required any more frequently than once a week, and possibly once a month would suffice to keep the information current. It is estimated that this entire procedure would be an insignificant addition to the work normally performed in both the Operations and Maintenance Departments.

Turning next to a consideration of the salaries, or pay and allowances, area, any cost data derived from salaries would be provided to the administrative department of a squadron by the supporting Navy Accounts Disbursing Office and would naturally follow the semi-monthly payday schedule. Within the administrative department the personnel

division maintains personnel allowance records that change with relative infrequency. To the allowance lists the personnel division would apply the current manning level percentages (available from the fleet enlisted personnel distribution office, though not now published) to arrive at the so-called[7] "standard payroll," and then the actual payroll would be posted against the standard. While this need not be a time-consuming procedure, the already thinly spread administrative department would probably look favorably upon an alternative procedure, especially since disbursing storekeepers (the payroll clerks of the Navy) are collected from fleet squadrons in order that their combined efforts may be utilized by the Navy Accounts Disbursing Office. The alternative would entail furnishing of manning level information direct from the enlisted personnel distribution office to the disbursing office where a direct run-off of the comparative report could be made concurrently with the preparation of the payroll. Since machine accounting facilities are utilized in both of these facilities, additional workload here would be negligible, and would certainly be of no consequence to the squadron commanding officer.

The squadron participation in ALFA Allotment accounting is at most a very minor consideration. The most that would be required of a squadron to implement any of the proposals of Chapter 2 concerning the ALFA Allotment would be a periodic report to the supporting air station listing the average on-board count of aircraft or of men. In a similar manner, the costing of utilities to a squadron would be a problem for the reporting station. The effectiveness of such costing on the reduction of expenditures would depend largely upon the emphasis placed upon

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[7] In the previous chapter of this paper.

it by the commanding officer through the usual military chain of command.

Administration of accounting procedures for ground training costs would fall the lot of the training section of the operations department. No elaborate accounting procedure is envisioned; a priced school catalog would assist the training officer in shopping around for the training to be "bought,"[8] and a simple bank checking account type balance sheet would suffice for recording expenditures and balance available.

In the realm of flight safety, present procedures for recording and publishing accidents costs seem sufficient. It is difficult to envisage paying for use of materials directly expended in fire-fighting. This would be the equivalent of presenting a man with a bill for putting out a fire in his home. In other words, unless and until a taxation system is adopted for intra-service financing - a concept certainly not advocated here - such costing to the direct or ultimate consumer is not recommended.

No cost would accrue to a squadron in accounting for utilities costs or "use charges", though it is reasonable to assume that the benefit of increased cost-consciousness could be derived from closer command supervision over these costs if periodic statements (rather than bills) were rendered.

So much for costs to the squadron. It remains only to note in passing that not one cent went for purchase of a green eyeshade for even one accountant. What now about the return on the investment?

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[8]And present the school administrators with problems they are not prepared to answer.

The first prerequisite would seem to be a differentiation between two terms used together so frequently that the meanings are liable to intermingling. The terms are "Command" and "Control." Lest this become the starting point for a new - and much longer - study, it is best to adhere fairly closely to dictionary definitions in order to make a distinction between the two words. Command is the authority exercised by an individual over others through his rank or ability; control is a standard of comparison against which to check results. To control is to exercise directing, guiding, or restraining power. In a sense, then, command is pure, raw authority; control introduces the idea of efficiency in the execution of that authority. It is but a single step to equate control with manage: to control or direct the movements or workings. Nickerson, in his introductory chapter to Cost Accounting, decides that "effort control is perhaps simply another way of saying 'management'."[9] So? So the return on the investment to a squadron commanding officer is seen not in increased command but rather in improved control; not in more authority, but in more efficient and effective use of authority.

The application of these distinctions to one of the previously proposed cost measurements may serve to illustrate the potential value to a squadron commanding officer. Assume that the average percentage of crew readiness in the squadron stands at 80 percent. Further assume that the commanding officer commands crew readiness to be improved to 95 percent. (This does not even approach being as far-fetched as the legendary command, "There will be no more accidents.") While this

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[9]Nickerson, op. cit., p 13

command is in the process of being carried out, the commanding officer flies with several of the crews in turn. He makes the following tabulation of his own assessment of the capabilities of the crews and lists certain cost comparisons, or controls, which he deems pertinent:

Crew Number	C.O.'s Assessment	% Ready	Crew hours flown this month	Fuel cost $/flight hour
1	Very good	92	30	$49.50
2	Excellent	90	25	48.00
3	Good	85	26	48.25
4	Fair	82	20	50.00

The conclusions to be drawn are as many and as varied as there are commanding officers. This commanding officer, however, concludes:

(a) Crew 2 is the best crew.

(b) Crew 1 is now doing a good job, but a couple of factors indicate their eagerness is not paying off as well as it should. First, the crew leader is a bit more interested in his grade than he is in training his crew (His 92 is actually not worth as much as Crew 2's 90). Second, even though Crew 1 is getting more time in the air, the pilots have not learned to operate the engines at the most efficient power settings. (This is dependent on the crews performing similar types of training exercises and discounts the mechanical differences between the aircraft.

(c) Crew 3 had better get moving, though its power setting procedures are in keeping with the best.

(d) Crew 4 needs help. The members of Crew 2 will be assigned as instructors and as members of the standardization board.

1	[illegible]	41	[illegible]	[illegible]
2	[illegible]	40	[illegible]	[illegible]
3	[illegible]	42	[illegible]	[illegible]
4	[illegible]	43	[illegible]	[illegible]

The difference between this evaluation and the present method can be seen by comparing it with the following excerpt from a recent edition of the Navy Times newspaper:

> Two crews of Patrol Squadron 23 at the Naval Air Station here have received a "well done" from their skipper for scoring a perfect 100 percent in competitive exercises so far this year.
>
> The crews are No. 6 and 13. Congratulating them was Comdr. W. V. Collins, skipper of the unit.
>
> These competitive exercises are tests given to a combat air crew in all phases of Anti-Submarine Warfare. The exercises are graded on many different aspects besides the accuracy of the final delivery. Planning, methods employed, procedures and crew coordination are only a few of the areas where a slight mistake can mean loss of points, and the much desired perfect score.[10]

Without a single intention of detracting from the accomplishments reported above, it is noted that not a single word is included about operating economy. It is perhaps superfluous to add that fuel economy is directly translatable into either increased endurance or increased range or both, and this in turn may spell the difference between a kill and a lost contact or between successful return to base and disaster.

A firmer, surer hand on the reins of control is not a benfit limited to the squadron commanding officer alone in the application of cost measurements. The type commander stands to gain as well. In the raining area, the type commander could use cost data to measure directly the relative operating efficiency of all squadrons under his command, whether it be operational or administrative command. Proceeding only in the fairly well explored paths of BRAVO charges, the type commander need not rely on "seaman's eye" estimates of the economics practiced by various squadrons. At present the squadrons report both

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[10] Navy Times, April 22, 1961, p 14

BRAVO status and flight hours, but the fuel costs are not broken out of the total. Further, the BRAVO status is reviewed and controlled by the supply department of the staff, while flight hours are monitored by the training division in the readiness department and do not constitute a strict control factor in comparing the readiness of squadrons flying the same type of aircraft. To be sure, actual recent gross costs per flight hour are considered in arriving at the operating target (OPTAR) granted each squadron monthly from the BRAVO funds, but strict accounting for the hours actually flown during the accounting period against the amount budgeted is not generally practiced.

Insofar as NSA and APA spare parts are concerned, the type commander controls the initial stocking by ships and stations of allowance lists based on usage data. Replenishment of allowance lists are of concern to the type commander only in those instances where aircraft flight operations are restricted or hindered by the lack of needed parts. This is a form of "management by exception" sometimes referred to as "the squeaking wheel gets the grease." If the type commander were to receive information on dollar value and number of line item issues of these two classes of materials (APA and NSA Spares) it appears that he would have a better basis for comparison of the relative operating efficiencies of the supply departments of the ships. In addition, the cost of operating various types of aircraft could be correlated with the several classes of aircraft carriers in the fleet. For example, a disparity existed for a period of several years between the practice of two fleets - Atlantic and Pacific - in operating the A3D aircraft. The type commander in the Atlantic Fleet (COMNAVAIRLANT) proposed, and was

backed by the Fleet commander, not to employ the A3D aircraft on certain of the older and smaller attack carriers. Therefore, this fleet used the A3D only on the larger Midway- and Forrestal-class ships. The Pacific Fleet, however, utilized the aircraft on both its small and large carriers. Close attention to the dollar value, number of issues, and range of issues of spare parts to support the aircraft on the two different types of carriers should disclose the existence of any differences in the capabilities of the ships to support the A3D. As it was, either one command deprived itself needlessly or the other command took a calculated risk which was not calculated on the basis of complete information. In either event, cost data could have improved the validity of the military decision.

In 1959 and 1960 the Navy implemented a decision to disestablish a type of squadron known as the Fleet Air Service Squadron (FASRON). There was widespread discussion and controversy over the merits of continuing such squadrons as compared with transferring many of the functions of the squadrons to the supporting air stations. It is interesting to note, however, that neither opponent nor proponent of the FASRON could advance a defensible argument based on costs. The clinching argument used was not reduction in cost but realignment of functions, it being said that many of the functions of the FASRON were properly the responsibility of the shore activity. There is no question that such an argument might be valid without reference to cost; however, another interesting realignment of command was taking place simultaneously. The area air commanders (titled Commander Fleet Air, Quonset Point; Commander Fleet Air, Norfolk; and Commander Fleet Air, Jacksonville, on

the East Coast) were donning another hat in the shore activity chain of command, and thereafter were known also as Commander Naval Air Bases (COMNAB) of the Naval Districts in which they were located. The successful argument in this instance was that the new command relationship would make the shore activities more responsibe to fleet requirements. Now one of the more important readiness related functions of the old FASRON was to provide transportation of men and materials from the shore to aircraft carriers at sea - a function which goes by the call-name of COD, meaning Carrier On board Delivery. With the disestablishment of the FASRON, COD was transferred to the local air stations. The double realignment of functions permitted fleet control of this function to continue through the COMNAB "hat" of the COMFAIR to the air station commanding officer. This solution shortly proved unsatisfactory, and the next step was the commissioning of a COD squadron at the Naval Air Station, Norfolk, with detachments as needed at other East Coast air stations. Assuming that the last step taken has in fact resulted in the most efficient solution to the problem of furnishing shore-to-ship and ship-to-shore airlift capability, efficient costs of operating in this fashion should be accepted as basic. However, had the costs of the intermediate steps been evaluated in advance, it is to be hoped that at least some of them would have been eliminated. To cite but one, the administrative costs involved in transferring personnel (even though no physical transfers were necessarily involved) from FASRON to air station to COD squadron could have been used to press the advisability of carefully considering the changes in several alternative ways before any action was taken.

The usefulness of better cost information to the Fleet Commander is so apparent as to obviate description. It may be wise, however, to point out certain limitations which should be observed in order that the dollar sign does not overshadow readiness. Assuming that the fleet commander has good cost information for other types of forces as well as aircraft squadrons, he and his planners should be better able to price out not only "normal" fleet operations but also the additional costs of flexing Uncle Sam's muscles in support of his decisions in international affairs.

"Normal" fleet operations are considered to be those which involve training - to produce increased readiness - and the logistic functions of supporting this training. (It should not be assumed that training and logistic support are mutually exclusive, however, for the logistic forces must also be trained in their tasks in support of readiness.) Task Group ALFA, one of the semi-permanent anti-submarine warfare training forces, is illustrative of "normal" operations. In applying cost data to the use of the numerous units involved in Task Group ALFA, the fleet commander and his operational commander, Commander Anti-Submarine Defense Forces, Atlantic (COMASDEFORLANT), could price out various alternative combinations of units. Within the total funds available to the fleet commander, the costs of the various combinations (probably presented as differing Operation Orders) must not be the governing consideration. The position of preeminence must go to the state of readiness achieved by each alternative Operation Order. On the other hand, cost data may well enable the commander to select three plans for successive execution whose collective readiness contribution

or value exceeds a single more ambitious (and more costly) plan.

Unusual operations in support of the "cold war" have plagued the fleet commanders in a way not always thought of by the casual observer. It is almost intuitively known that fleet operating costs increase in periods of crisis, and the "hotter" the crisis the less thought is, and must be, given the cost of facing it. And yet specific operating costs - such as the cost of aircraft squadron readiness - are so little known that the fleet commander (and his superiors in Washington) are hard put to it to itemize the increases. This makes for embarrassing times indeed in the halls of Congress when the Navy seeks to recover extra costs in supplemental appropriations. Pleas of the fleet commander to units physically involved in such crises as Suez and Lebanon produce disappointingly little cost information for the simple reason that operational commanders and their staffs are not trained or accustomed to thinking in terms of dollar costs.

This same unfamiliarity with dollar costs in direct association with operations is a never-ending problem at the highest level of command, both in the Office of the Chief of Naval Operations and in the Navy Secretariat. When an economy-bent Congressman asks a direct question at appropriation hearings on how much it costs to operate an aircraft squadron at the Naval Air Station, Norfolk, as compared with the cost of operating the same squadron at the air station in his home district, it is not likely that his support will be gained by answering, "We don't measure costs that way, Mr. Congressman." The frequent charges leveled against the armed forces, not only by Congressmen but by many others as well, that there is widespread waste and lack of cost-

consciousness can scarcely be refuted by pious claims. Facts and figures based on just such simple building blocks as the costs of squadron readiness could go a long way toward proving that the Navy has finally recognized that "the job of economizing, which some would delegate to budgeteers and comptrollers, cannot be distinguished from the whole task of making military decisions."[11]

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[11]Hitch and McKean, op. cit., p 3

CHAPTER IV

SUMMARY AND CONCLUSIONS

The "readiness" chapter of this paper was devoted to gaining an insight into the factors that affect readiness. After viewing readiness briefly from various vantage points in the chain of command, it was decided that, although there is a different connotation at almost every level of command, most connotations are but different facets of the same gem. Said a slightly different way, readiness is a measure of the ability of that portion of the service being observed to carry out its assigned mission.

Figure 11 portrays the more important and obvious costs of readiness. In Chapter II were outlined not only existing measures of costs but also other possible ones. Indications of some uses of this cost data were made, but at this juncture very little consideration was given to the feasibility of making the measurements.

Chapter III showed that the overriding arguments against costing to a squadron as the ultimate consumer arise from the decision to keep the problem simple for the operating activities. Based upon this prerequisite and yet unwilling to ignore valuable benefits to be derived from the effort, the return trip was made from the squadron level back up the chain of command, pointing out along the way some of the uses to which the information could be put. It was recognized that some of the

possible costing procedures are indeed not feasible when subjected to the two-fold acid test of (1) what does it cost to do the job? and (2) what is it worth? On the other hand, it is entirely inappropriate to abandon the entire approach because it cannot be applied without exception.

It is concluded that cost data would serve command purposes well if it were collected and made available at various levels. It is first necessary, however, to determine objectively just which elements of cost should be collected at each command level. The distinction must also be made between the elements to be collected, collated, and reported by the shore activities and those which should become the responsibility of the operating forces.

To consider the latter first, the decision to keep the accounting problem of the operating forces simple is regarded as an extremely valid one. The unfortunate by-product of this decision, however, is that the operating forces usually deny themselves the benefits to be derived from even simple accounting. Thus cost data related to the BRAVO Allotment (fuel and NSA Spares) and to APA Spares can and should be collected and used by operating forces as an aid to attain better control by the commanding officers and commanders involved.

While collection of certain other costs, particularly those in the utilities area, appear beyond the useful capabilities of even the shore activities at present, the problem may begin to resolve itself in the near future. Presently planned extension of the Navy Industrial Fund to additional air stations, even though specifically limited to industrial functions of the station, will undoubtedly generate cost

data that could be applied statistically to the operating functions as well.

A caution should be injected lest the accountants become over-exuberant. The area of payroll costs provides a setting for this caution. The information here is almost readily available. The uses for the information, however, are difficult for the lower levels of command to comprehend inasmuch as there is very little control now exerted over personnel distribution at the lower levels. The caution, then, is collect the information for which there is a well-defined use and well thought out need, and nothing more than that. Otherwise, the entire program would and should collapse under the weight of the charge of accounting for accounting's sake.

Finally, there is strong evidence to support the statement of Hitch and McKean that "the job of economizing, which some would delegate to budgeteers and comptrollers, cannot be distinguished from the whole task of making military decisions."[1]

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[1]Hitch and McKean, op. cit., p 3

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